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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/667,806 | 09/22/2003 | Asad A. Khan | KENT.35570US3 | 2167 |
| 7590 08/09/2005 | | | EXAMINER | |
| PEARNE & GORDON Ste. 1200 1801 East 9th Street Cleveland, OH 44114-3108 | | | TON, MINH TOAN T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2871 | |

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,806

Applicant(s)

KHAN ET AL.

Examiner

Toan Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/823329.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restriction

1. An election of Group II directing to claims 1-4 and 8-9 is acknowledged. The product in Group I is patentably distinct from the method in Group II. Thus, claims 5-7 are withdrawn from consideration.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1-4 and 8-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 29-35 of U.S. Patent No. 6377321. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present claims appear broader in scope than the patented claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doane et al (US 543811) in view of Verney (US 4779942).

Doane discloses (see at least col. 4, lines 9-21, col. 5, line 26-col. 6, line 20) a method of producing a chiral nematic liquid crystal display comprising: the chiral nematic liquid crystal being multistable, with a twisted planar texture parallel to the cell walls in the field-OFF state, wherein the cell is in a colored light reflecting state, and with a focal conic texture when a low electric field is applied, wherein the cell is in a white scattering state. In the twisted planar texture, the material will reflect light according the pitch of the material ($\lambda=np$, where λ is the wavelength of the light reflected, n is the average refractive index of the material, and p is the pitch of the material). Wavelengths between 380 and 800nm are in the visible light spectrum

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and above 800nm are in the infra-red range. Doane discloses light modulating cells with the chiral nematic liquid crystal material.

The difference is a single cell which reflects infra-red light or a single cell which reflects visible light.

However, Verney teaches (see at least col. 1, line 38-col. 2, line 2) that cockpit lighting that is used with night vision goggles must be such that the pilot can view the instruments while looking under or around the goggles with the unaided eye and must also not degrade the image intensification while looking through the goggles. Normally that is accomplished by using green and blue light for the display. Warning lights in the cockpits are generally red with blue-green filters over them which have to be removed for daytime use, and such filtered lights do not draw attention very well. Accordingly, Verney teaches (see at least col. 3, lines 15-29) that light with a wavelength under 640nm is viewable during the day without the goggles and light with a wavelength of 600-720nm is viewable through the night vision goggles. Since Verney teaches that the display must be viewable during the day with visible light and during the night with red to near infra-red light, it would have been obvious to one of ordinary skill in the art for the display panel to reflect both types of light. Since each cell of Doane reflects visible light or infra-red light, it would have been obvious to one of ordinary skill in the art to make a cockpit display panel of two such cells, one which reflects light with a wavelength under 640nm, for viewing during the day, and one which reflects light with a wavelength between 600 and 720nm, for viewing through the night vision goggles.

The thickness of the liquid crystal cells in all of the examples of Doane range from 5-15 μ m. Further, in examples 10 and 22, Doane discloses using a black material on the back substrate to make the scattering state of the liquid crystal appear black instead of white.

Since it is known in the art how to expand the reflection bandwidth by varying the pitch of the cholesteric liquid crystal, it would have been obvious to one of ordinary skill in the art to expand the reflection bandwidth and use a single cell instead of plural cells to reduce the weight and thickness of the device.

Doane discloses in the examples forming cells by adjusting the pitch of the liquid crystal so that the material reflects the desired wavelength, spacing two substrates, filling the space with the liquid crystal, and connecting electrodes for applying an electric field.

It is common and known in the art in the liquid crystal art to use three cells, one for each primary color, to form a multicolored display. Accordingly, for a multicolored display instead of a single colored display during the day, it would have been obvious to one of ordinary skill in the art to include three liquid crystal cells which reflect visible light, one for each the three primary colors, in addition to the one that reflects infra-red light.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 2, 2005



**TOANTON
PRIMARY EXAMINER**